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Eduardo Ruiz

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EXAMINER

EWALD, MARIA VERONICA

ART UNIT

PAPER NUMBER

1791

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,934	Applicant(s) RUIZ ET AL.	
	Examiner MARIA VERONICA D. EWALD	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-16,18-31,45,70,71,76 and 77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-16,18-31,45,70,71,76 and 77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/13/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 7, 12 – 15, 19 – 20, 26 – 28, 45, 70 and 71 are rejected under 35 U.S.C. 102(b) as being anticipated by Leoni, et al. (U.S. 5,152,949). Leoni, et al. teach a mold assembly for generating a composite part from a strengthener in a generally solid phase and a matrix in a generally liquid phase; said mold assembly comprising: a base mold including a strengthener chamber for receiving the strengthener (item 14 – figure 1), a matrix injection inlet for injecting the matrix in said strengthener chamber (item 26 – figure 1) and an evacuation outlet (item 28 – figure 1), said inlet and said outlet defining a propagation direction (column 5, lines 15 – 20 and 27 – 31); a cover mold including a compression chamber defining a compression wall substantially uniformly spaced apart from the composite part to be generated and having a geometry substantially conforming to a configuration of the composite part to be generated (item 38 – figure 1) and a fluid control aperture for injecting a controlling fluid in said compression chamber (item 24 – figure 1); said cover mold being so configured as to be sealingly mounted on said base mold whereby

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said strengthener chamber and said compression chamber are adjacent and said controlling fluid is an incompressible fluid (figure 1); and a deformable member provided in a gap defined by said strengthener chamber and said compression chamber (item 36 – figure 1), said deformable member being so configured as to pressurize the matrix toward the strengthener and propagate the matrix along said propagation direction upon compression exerted on said deformable member by the controlling fluid (figure 1; column 7, lines 55 – 68; column 10, lines 5 – 50); wherein said matrix injection inlet includes a diffusion passage provided on a contact wall of said strengthener chamber (figure 1); wherein said evacuation outlet is connectable to a vacuum source to selectively generate at least a partial vacuum in said strengthener chamber (column 10, lines 5 – 10); and wherein said fluid control aperture is connectable to a fluid source to generate pressure in said compression chamber (column 9, lines 53 – 62).

With respect to claims 12 – 15 and 19 – 20, Leoni, et al. further teach that said gap has a variable thickness because of the pressure exerted on the bladder, such that the introduction of a vacuum between the bladder 36 and cauls 32 evacuates gas between the two layers, thereby the thickness of the gap will ultimately vary (figure1; column 9, lines 40 – 50); wherein said compression chamber has a first thickness, said strengthener chamber has a second thickness, said first and second thickness being variable upon deformation of said deformable member (column 9, lines 65 – 68; column 10, lines 15 – 25); wherein said membrane is impermeable to liquid (column 7, lines 45 – 68); wherein said strengthener chamber comprises a contact wall for locating the

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strengtheners, said contact wall having a controlled surface finish (figure 1; column 5, lines 20 – 24); and wherein said base mold and said cover mold are rigid (figure 1; column 5, lines 13 – 15).

With respect to claims 26 – 28, 70 and 71, the reference also teaches that the said deformable member includes an elastic material being provided in at least a portion of said compression chamber and adjacent to said strengthener chamber (figure 1; column 5, lines 34 – 50); wherein said cover mold includes compartmentalized portions so configured as to independently move with respect to one another toward and away from said strengthener chamber for providing a gap of variable thickness (figure 1; column 10, lines 15 – 50); wherein said mold assembly further includes a tube provided in said compression chamber and adjacent to said strengthener chamber, said tube being connected to a pressure source and deformable under pressure generated from the pressure source, said tube including at least one extremity mounted through said cover mold for controlling the pressure in said tube (item 24 – figure 1; column 9, lines 55 – 60); wherein said deformable member is able to be swollen in said compression chamber from the matrix permeating the strengthener to generate a deformation zone, said deformable member receiving pressure from the controlling fluid in proximity of said deformation zone for redirecting the matrix towards the strengthener (column 10, lines 15 – 25); wherein said deformation zone is adjacent to a matrix flow front corresponding to a portion of the strengthener impregnated by the matrix, said matrix flow front propagating in the strengthener

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along said propagation direction as the matrix in said deformation zone is redirected to the strengthener (figure 1).

With respect to claim 45, Leoni, et al. teach a mold assembly for generating a composite part from a strengthener and a matrix; said mold assembly comprising: a base mold including a strengthener chamber for receiving the strengthener (item 14 – figure 1) and a matrix injection inlet for injecting the matrix in said strengthener chamber (item 26 – figure 1) and an evacuation outlet (item 28 – figure 1), said inlet and said outlet defining a propagation direction; a cover mold including a compression chamber defining a compression wall substantially uniformly spaced apart from the composite part to be generated and having a geometry substantially conforming to a configuration of the composite part to be generated (item 38 – figure 1) and a fluid control aperture for injecting a controlling fluid in said compression chamber (item 24 – figure 1); said cover mold being so configured as to be sealingly mounted on said base mold whereby said strengthener chamber and said compression chamber are adjacent and said controlling fluid is an incompressible fluid (figure 1); and a deformable membrane member provided in a gap defined by said strengthener chamber and said compression chamber (item 36 – figure 1), said deformable member generating a deformation zone in said compression chamber from a portion of the matrix permeating the strengthener, said deformable member being pressurized by the controlling fluid in proximity of said deformation zone for redirecting the portion of matrix generating said deformation zone back to the

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strengtheners and for propagating the matrix along said propagation direction (column 10, lines 1 – 50).

Claims 1, 2, 4, 7 – 15, 18 – 19, 21 – 23, 25 – 28, 45, 70 – 71 and 76 – 77 are rejected under 35 U.S.C. 102(b) as being anticipated by Cartwright (U.S. 6,506,325). Cartwright teaches a mold assembly for generating a composite part from a strengthener in a generally solid phase and a matrix in a generally liquid phase; said mold assembly comprising: a base mold including a strengthener chamber for receiving the strengthener (item 210 – figure 1), a matrix injection inlet for injecting the matrix in said strengthener chamber (item 220 – figure 1) and an evacuation outlet (item 216 – figure 1), said inlet and said outlet defining a propagation direction (figure 1); a cover mold including a compression chamber defining a compression wall substantially uniformly spaced apart from the composite part to be generated and having a geometry substantially conforming to a configuration of the composite part to be generated (area between items 214 and 215 – figure 1) and a fluid control aperture for injecting a controlling fluid in said compression chamber (item 232 – figure 1); said cover mold being so configured as to be sealingly mounted on said base mold whereby said strengthener chamber and said compression chamber are adjacent and said controlling fluid is an incompressible fluid (figure 1 column 4, lines 44 – 47) ; and a deformable member so provided in a gap defined by said strengthener chamber and said compression chamber, said deformable member being so configured as to pressurize the matrix toward the strengthener and propagate the

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matrix along said propagation direction upon compression exerted on said deformable member by the controlling fluid (item 214 – figure 1; column 5, lines 30 – 35); wherein said matrix injection inlet includes a diffusion passage provided on a contact wall of said strengthener chamber (figure 1); wherein said evacuation outlet is connectable to a vacuum source to selectively generate at least a partial vacuum in said strengthener chamber (column 5, lines 33 – 38); wherein said fluid control aperture is connectable to a fluid source to generate pressure in said strengthener compression chamber (item 228 – figure 1); wherein said fluid control aperture extends in said cover mold and said matrix injection inlet extends in said base mold in a generally similar direction (figure 1); wherein said cover mold includes a vent extending from said compression chamber and through said cover mold (item 230 – figure 1; column 5, lines 38 – 43); wherein said vent is connected to a vacuum source to selectively generate at least a partial vacuum in said compression chamber (item 230 – figure 1; column 5, lines 38 – 43); wherein said vent comprises a valve to regulate the flow of the controlling fluid through said vent (figure 1; column 5, lines 38 – 43, 58 – 61); wherein said gap has a variable thickness (column 5, lines 53 – 55); wherein said compression chamber has a first thickness, said strengthener chamber has a second thickness, said first and second thickness being variable upon deformation of said deformable member (column 5, lines 53 – 57); wherein said deformable member includes a membrane sealingly mounted between said strengthener chamber and said compression chamber (item 214 – figure 1); wherein said membrane is impermeable to liquid (column 5, lines 30 – 35).

With respect to claims 18 – 19, 21 – 23 and 25 – 28, Cartwright also teaches that the said mold assembly includes temperature controlling means (column 5, lines 25 – 27); wherein said strengthener chamber comprises a contact wall for locating the strengthener, said contact wall having a controlled surface finish (figure 1; column 3, lines 59 – 67); wherein said deformable member includes a deformable element (item 217 – figure 1) and a membrane (item 214 – figure 1), said membrane being sealingly mounted between said strengthener chamber and said compression chamber, said deformable element being provided in at least a portion of said compression chamber (figure 1; column 5, lines 45 – 50); wherein a surface of said deformable element is so machined as to be complementary to the shape of the composite part (figure 1); wherein said machined surface of said member includes a series of grooved channels so configured as to receive said membrane (item 217 – figure 1; column 5, lines 45 – 50); wherein said deformable element includes a generally porous and elastic material (column 5, lines 45 – 50); wherein said deformable member includes an elastic material being provided in at least a portion of said compression chamber and adjacent to said strengthener chamber (figure 1); wherein said cover mold includes compartmentalized portions so configured as to independently move with respect to one another toward and away from said strengthener chamber for providing a gap of variable thickness (column 5, lines 35 – 45).

With respect to claims 70 – 71 and 76 – 77, the reference also teaches that the said deformable member is able to be swollen in said compression

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chamber from the matrix permeating the strengthener to generate a deformation zone, said deformable member receiving pressure from the controlling fluid in proximity of said deformation zone for redirecting the matrix towards the strengthener (column 5, lines 35 – 45 and 50 – 60); wherein said deformation zone is adjacent to a matrix flow front corresponding to a portion of the strengthener impregnated by the matrix, said matrix flow front propagating in the strengthener along said propagation direction as the matrix in said deformation zone is redirected to the strengthener (figure 1; column 5, lines 50 – 60); wherein said mold assembly includes a porous medium provided in said compression chamber for controlling the propagation of the fluid injected in said compression chamber (item 217 – figure 1; column 5, lines 45 – 50); wherein said porous medium is made from a generally deformable element (column 5, lines 45 – 50).

With respect to claim 45, Cartwright teaches a mold assembly for generating a composite part from a strengthener and a matrix; said mold assembly comprising: a base mold including a strengthener chamber for receiving the strengthener (item 210 – figure 1) and a matrix injection inlet for injecting the matrix in said strengthener chamber (item 220 – figure 1) and an evacuation outlet (item 218 – figure 1), said inlet and said outlet defining a propagation direction (figure 1); a cover mold including a compression chamber defining a compression wall substantially uniformly spaced apart from the composite part to be generated and having a geometry substantially conforming to a configuration of the composite part to be generated (area between 214 and

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215 – figure 1) and a fluid control aperture for injecting a controlling fluid in said compression chamber (item 232 – figure 1); said cover mold being so configured as to be sealingly mounted on said base mold whereby said strengthener chamber and said compression chamber are adjacent and said controlling fluid is an incompressible fluid (figure 1; column 4, lines 45 – 48); and a deformable membrane member provided in a gap defined by said strengthener chamber and said compression chamber, said deformable member generating a deformation zone in said compression chamber from a portion of the matrix permeating the strengthener, said deformable member being pressurized by the controlling fluid in proximity of said deformation zone for redirecting the portion of matrix generating said deformation zone back to the strengthener and for propagating the matrix along said propagation direction (column 5, lines 50 – 60).

Cartwright teaches a molding apparatus, wherein a strengthener or reinforcing material is disposed in a base mold. The base mold is covered with a cover mold, comprised of a flexible bag material (item 215 – figure 1). The base mold includes a matrix injection inlet for injecting a resin into the strengthener. The cover mold includes a "pressurization chamber" which is controlled via a fluid controller to inject a pressurization fluid between a deformable member (item 214 – figure 1) and the cover. The fluid controls the amount of pressure exerted on the composite product, so as to control the amount of resin "infused" or impregnated into the strengthener. Because of the fluid control and the vacuum which is generated, the pressurization chamber and the space within it can be

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varied, depending on the characteristics desired of the composite part (column 6, lines 33 – 45).

The Examiner is also noting that Applicant has claimed "temperature controlling means" in claim 18. Based on the specification, the Examiner is not interpreting such claim language as an invocation of 35 U.S.C. 112, 6th paragraph because paragraph 0111 of the specification states that the temperature may be controlled by thermal resistors or any other known heating means. Thus, given its broadest reasonable interpretation, as long as a prior art reference includes any type of conventional heating means, such means anticipates the claim as written.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Leoni, et al. or Cartwright in view of Fritz, et al. (U.S. 6,257,866). Leoni, et al. and Cartwright teach the characteristics previously described but do not teach that the base mold includes a contact wall, peripheral walls and shoulders and wherein the cover mold includes a complementary contact wall, peripheral walls

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and shoulders, with a ridge and groove arrangement provided along the shoulders of the molds.

This however, is a conventional or known configuration of a mold assembly. For example, in a vacuum mold to form plastic sheets, Fritz, et al. teach a base mold with a contact wall, peripheral walls and shoulders with a pin or projection, which complementary secures to a cover mold with a similar contact wall, peripheral walls and shoulder with a channel. The channel and projection are used to securely clamp the sheet.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the mold assembly of either Leoni, et al. or Cartwright such that it has walls and a ridge/groove pattern like that of Fritz, et al. since such an assembly is known for securing a sheet in a vacuum mold and since such a configuration is known in the art of vacuum molding.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leoni, et al. or Cartwright in view of Fritz, et al. and further in view of Segen, Jr. (U.S. 6,250,909). Leoni, et al., Cartwright and Fritz, et al. teach the characteristics previously described but do not teach that the ridges and grooves are generally triangular in cross-section.

In a method to clamp a sheet in a thermoforming apparatus, Segen, Jr. teach clamping units with a generally triangular cross-section (figure 4a – 4c). The clamping units secure the sheet to the frame before and during thermoforming.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the apparatus of either Leoni, et al. or Cartwright with the mold configuration of Fritz, et al., further configured with the v-shaped ridges and grooves of Segen, Jr. for the purpose of securing the membrane before and during vacuum molding.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leoni, et al. or Cartwright in view of Palmer, et al. (U.S. 4,942,013). Leoni, et al. and Cartwright teach the characteristics previously described but do not teach that the membrane is permeable to gas.

In a vacuum molding apparatus, Palmer, et al. teach the use of multiple membranes or deformable members which contact a chamber wherein a strengthener is impregnated with resin. One of the deformable members is a breather cloth layer. The layer is permeable to gas and allows for an even distribution of pressure and compaction across and along the assembly (column 7, lines 50 – 56).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the apparatus of either Leoni, et al. or Cartwright with the breather layer of Palmer, et al. for the purpose of evenly distributing the pressure across the assembly, thereby ensuring even compaction as taught by Palmer, et al.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cartwright in view of Gibson (U.S. 5,093,067).

Cartwright teach the characteristics previously described but do not teach that the deformable element is injected directly into the gap. However, the formation of a diaphragm or elastic member via injection molding is a known process.

For example, Gibson teaches the formation of a flexible diaphragm via the injection of resin material into a gap between two molds (figure 2c).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the apparatus of Cartwright such that the deformable element is injected directly into the gap for ease of production and because it is known to produce flexible diaphragms wherein a resin material is injected into a gap between an upper and lower mold, as taught by Gibson.

Claims 29 – 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leoni, et al. or Cartwright in view of Seemann (U.S. 5,439,635). Leoni, et al. and Cartwright teach the characteristics previously described but do not teach that the cover mold includes a compression wall with a plurality of passages which are disposed longitudinally and transversally or wherein the diffusion passage is generally aligned with at least one transversal passage and said matrix injection inlet of said base mold is generally aligned with at least one longitudinal passage.

In an apparatus to produce a composite article comprised of reinforcing fibers impregnated with a resin, Seemann teaches that the cover mold or bag is configured with a series of grooves or elongated flow conduits. The flow conduits communicate for fluid flow with a resin distribution pattern (column 5, lines 62 – 68). Thus, any pressure exerted on the bag is evenly distributed along the pattern, thereby ensuring that the resin flows uniformly into the voids of the strengthener (column 3, lines 60 – 65). Because of even distribution of pressure, the strengthener is completely wetted and any bubbles or voids are eliminated (column 1, lines 40 – 50).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the apparatus of either Leoni, et al. or Cartwright with the cover mold of Seemann which includes a grooved surface for the purpose of mimicking the finished outer surface of the product, thereby ensuring that the resin is evenly distributed through the strengthener, eliminating voids and bubbles as taught by Seemann.

Information Disclosure Statement

15. The prior art made of record, submitted April 13, 2009, though not relied upon is deemed pertinent to the state of the art and thus, has been considered.

Response to Arguments

16. Applicant's arguments filed April 13, 2009 have been fully considered but they are not persuasive. Applicant's primary argument with respect to the

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references previously-cited is that the references do not teach or suggest the features of newly-amended claims 1 and 45 which now require that the cover mold define a compression wall substantially uniformly spaced apart from the composite part to be generated and having a geometry substantially conforming to a configuration of the composite part to be generated. Such limitations have related the apparatus to the contents being worked upon and do not further distinguish the apparatus *structurally* and thus, the features of newly-amended claims 1 and 45 remain rejected as anticipated by the prior art references of Leoni, et al. and Cartwright. Per MPEP 2115, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963))."

With respect to the reference of Leoni, et al., Leoni, et al. teach a cover mold (item 20 – figure 1) which includes a compression chamber (item 38 – figure 1) which may be pressurized via port 24. Regardless of whether the wall conforms to the geometry of the part to be generated is immaterial because the apparatus includes a cover mold, base mold and deformable member as claimed. However, if one does consider the new limitation(s), the apparatus of Leoni, et al. is fully capable of meeting such limitations. Because the number and configuration of the cauls placed in the base mold may be modified, the cover

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mold itself does substantially conform to the part because there is a planar portion of the part (on which the cauls rest). In addition, because like Applicant's apparatus, resin or foam may be injected through port 26, the foam may expand the membrane 36 up towards the cover mold, thereby, the part being generated conforms to the shape or geometry of the cover (or vice versa). Compaction of the foam and the compression of the membrane may then be controlled by applying pressure through the pressurization port.

With respect to the reference of Cartwright, Applicant argues that the “bag” of Cartwright (item 215 – figure 2) is not a cover mold and thus, Cartwright does not teach the limitations of newly-amended claims 1 and 45. The Examiner disagrees. The cover of Cartwright is a cover mold because it does impart shape to the item or part being generated. Furthermore, item 215 does conform to the shape of the composite part. However, without even considering such material limitations, the apparatus of Cartwright structurally anticipates and functions like that of Applicant's apparatus. There is a cover mold (item 215) disposed such that a space is formed (between item 215 and 214) which may be filled with a pressurization fluid. A base mold is formed (item 210) such that resin is injected into the chamber above the mold and a deformable member is disposed between the chambers, which may be shifted depending on the vacuum or pressurization initialized. Thus, the reference of Cartwright still anticipates the claims as noted in the rejection.

With respect to the remaining dependent claims, such claims remain rejected as obvious over Leoni, et al. or Cartwright in view of the secondary references identified in the rejection.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA VERONICA D. EWALD whose telephone number is (571)272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE

/Maria Veronica D Ewald/
Primary Examiner, Art Unit 1791